LOG OF MEETING
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SUBJECT: UL 8400 STP Meeting on Immersive Technologies
DATE OF MEETING: December 13, 2022, 7:00pm, ET
LOG ENTRY SOURCE: Treye Thomas (EXHR)
DATE OF LOG ENTRY: December 20, 2022
LOCATION: Teleconference
CPSC ATTENDEE(S): Treye Thomas (EXHR) and Stephen Harsanyi (ESHF)
NON-CPSC ATTENDEE(S): Contact UL for the attendee list.

Summary of Meeting:

The standard technical panel (STP) for draft standard UL 8400, *The Proposed First Edition of the Standard for Safety for Virtual Reality, Augmented Reality, and Mixed Reality Technology Equipment*, met to discuss requirements for Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) products.

The STP primarily discussed whether the standard should include an allowance for products intended for children under 12 years of age. Members considered whether it was sufficient to include a requirement for robust, peer-reviewed research to substantiate marketing immersive technologies to such ages. Members debated the amount of research, and from what sources, would constitute adequate supporting evidence of safe use for these ages. One member requested that research from third-party testing companies should constitute sufficient evidence. Other members, including CPSC staff, raised concern that such testing may be subject to bias. CPSC staff also voiced concerns expressed in the last STP meeting that it may be difficult to identify all reasonably foreseeable hazards in a study, particularly those with adverse long-term consequences. The STP decided not to include in the next ballot an allowance for an age label for under 12 years of age.

Several members stated that this draft standard does not address the safety requirements for products designed for users under 12 years of age, so we should not include such an allowance at this time. One member explained that head-mounted devices (HMDs) of immersive technologies pose risks to children's developing visual and musculoskeletal systems, among others. CPSC staff stated that more needs to be done to address reasonably foreseeable use of immersive technologies by children, such as those under age 12, including in educative settings and through software that is appealing to children. The STP considered creating a separate standard to address immersive technologies designed for younger ages.

The STP discussed biomechanical stress associated with HMDs (*e.g.*, neck strain), including from vigorous uses such as exercising. One task group member stated that the current requirements were too onerous. CPSC staff raised concern that the requirements were not onerous enough because they do not account for lower percentile statures; instead, the requirements are based on an air force research study of males wearing weighted aviation helmets. CPSC staff requested that the STP consider research that, at a minimum, involves female subjects as well, such as research shared during the meeting.

The STP also discussed requirements pertaining to mechanical robustness of HMDs; specifically, the draft loaded head impact requirements. One STP member proposed using a full mannequin wearing the HMD and falling, as opposed to the current draft requirement of dropping a head form wearing the HMD. Other members opined that such testing may have issues for consistency, and CPSC staff stated that people do not always catch themselves when they fall (they may land on their head). Another member stated that a user may dive to the ground during use and land headfirst. The STP edited the draft language to specify that a failure of this test would result from hazardous parts or loose shattered particles posing a risk of injury to the user's eyes.

Next Steps:

The STP will continue to work asynchronously on the draft standard. The STP plans to ballot the draft standard in the near future.